THE CLAIMS:

1. An isolated, synthetic or recombinant ω-conotoxin peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions or side chain modifications.

2. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 1 in which the fourth loop consists of the sequence:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more amino acid substitutions or side chain modifications.

3. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 1 ~~or claim 2~~ wherein each of the first, second and third loops of the ω-conotoxin peptide corresponds to the loop of a naturally occurring ω-conotoxin peptide, or such a sequence of amino acids which has undergone one or more amino acid substitutions, additions or deletions.

4. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 1 wherein the second loop is selected from:

SKLMYD [SEQ ID NO: 2],
SRLMYD [SEQ ID NO: 3],
DRLMYD [SEQ ID NO: 4],
DKLMYD [SEQ ID NO: 33],
SKLAYD [SEQ ID NO: 34],
SKLNleYD [SEQ ID NO: 35],
SRLNleYD [SEQ ID NO: 36],
SKLOhmhserYD [SEQ ID NO: 37],
SKLOmserYD [SEQ ID NO: 38],

5. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 1 having the following sequence:

CKSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 5]
CKSKGAKCSRLMYDCCSGSCSGTVGRC [SEQ ID NO: 6]
CKSKGAKCDRLMYDCCSGSCSGTVGRC [SEQ ID NO: 7]
CRSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 14]
CKSKGARCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 15]
CKSKGAQCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 16]
CKSKGAKCSKLMYDCCSGSCSGAVGRC [SEQ ID NO: 17]
CKSKGAKCDKLMYDCCSGSCSGTVGRC [SEQ ID NO: 18]
CKYKGAKCSRLMYDCCSGSCSGTVGRC [SEQ ID NO: 19]
CKSKGAKCSKLAYDCCSGSCSGTVGRC [SEQ ID NO: 20]
CKSKGAKCSKLMYDCCTGSCSGTVGRC [SEQ ID NO: 21]
CKSKDalAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 22]
CKSKGAKCSKLMYDCCSGSCSGTVGRCY [SEQ ID NO: 23]
CKSKGAKCSKLMYDCCSGSCSGTVGRC-OH [SEQ ID NO: 24]
YCKSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 25]
Ac-CKSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 26]

CKSKGAKCSKLNleYDCCSGSCSGTVGRC [SEQ ID NO: 27]
CKSKGAKCSRLNleYDCCSGSCSGTVGRC [SEQ ID NO: 28]
CKYKGAKCSRLNleYDCCSGSCSGTVGRC [SEQ ID NO: 29]
CKSKGAKCSKLOmhserYDCCSGSCSGTVGRC [SEQ ID NO: 30]
CKSKGAKCSKLOmserYDCCSGSCSGTVGRC [SEQ ID NO: 31]
CKSKGAKCSKLM(O)YDCCSGSCSGTVGRC [SEQ ID NO: 32]

or such a sequence which has undergone one or more amino acid substitutions or side chain modifications.

6. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 5 having one of the following sequences:

CKSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 5]
CRSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 14]
CKSKGARCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 15]
CKSKGAKCSKLAYDCCSGSCSGTVGRC [SEQ ID NO: 20]
CKSKGAKCSKLNleYDCCSGSCSGTVGRC [SEQ ID NO: 27]
CKSKGAKCSRLNleYDCCSGSCSGTVGRC [SEQ ID NO: 28]
CKSKGAKCSKLOmhserYDCCSGSCSGTVGRC [SEQ ID NO: 30]
CKSKGAKCSKLOmserYDCCSGSCSGTVGRC [SEQ ID NO: 31].

7. An isolated, synthetic or recombinant ω-conotoxin peptide according to claim 1 having the following sequence:

CKSKGAKCSKLMYDCCSGSCSGTVGRC [SEQ ID NO: 5].

8. An isolated, synthetic or recombinant ω-conotoxin peptide according to ~~any one of the preceding claims~~ claim 1 having a selectivity for N-type calcium channels over P/Q-

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type calcium channels.

9. Use of an isolated, synthetic or recombinant ω-conotoxin peptide according to ~~any one of the preceding claims~~ Claim 1 in a receptor binding assay to test the calcium channel binding activity of a peptide or other compound.

10. An isolated nucleic acid molecule comprising a sequence of nucleotides encoding or complementary to a sequence encoding a ω-conotoxin peptide according to ~~any one of claims 1 to 8~~ Claim 1.

11. A nucleic acid probe comprising a sequence of nucleotides encoding or complementary to a sequence encoding all or part of an ω-conotoxin peptide according to ~~any one of claims 1 to 8~~ Claim 1, said probe encoding or complementary to all or part of the fourth loop of said ω-conotoxin peptide.

12. A monoclonal or polyclonal antibody to an ω-conotoxin peptide according to ~~any one of claims 1 to 8~~ Claim 1.

13. A genetic construct comprising a vector portion and a nucleic acid capable of encoding a peptide according to ~~any one of claims 1 to 8~~ Claim 1.

14. A composition comprising: an isolated, synthetic or recombinant ω-conotoxin peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions, and

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a pharmaceutically acceptable carrier or diluent.

15. Use of an isolated, synthetic or recombinant ω-conotoxin peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions or side chain modifications in the manufacture of a medicament for the treatment of a condition where blockade of N-type calcium channels is associated with effective treatment.

16. Use of an isolated, synthetic or recombinant ω-conotoxin peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions or side chain modifications in the manufacture of a medicament for the reduction of neuronal damage following ischemia, production of analgesia, enhancement of opiate analgesia, treatment of schizophrenia or the treatment of stimulant psychoses, hypertension, inflammation, diseases which cause bronchoconstriction or for inhibition of progression of neuropathic pain.

17. A method for the treatment of conditions for which blockade of N-type calcium channels is associated with effective treatment including the step of administering to a mammal an effective amount of an isolated or recombinant ω-conotoxin

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peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions or side chain modifications.

18. A method for reducing neuronal damage following ischemia, for the production of analgesia, for enhancement of opiate analgesia, for the treatment of schizophrenia, hypertension, inflammation or diseases which cause bronchoconstriction, stimulant psychoses or for inhibition of progression of neuropathic pain including the step of administering to a mammal an effective amount of an isolated or recombinant ω-conotoxin peptide in which the fourth loop between cysteine residues 5 and 6 comprises the following sequence of amino acids:

SGTVGR [SEQ ID NO: 1]

or such a sequence which has undergone one or more conservative amino acid substitutions or side chain modifications.

19. Use of an isolated, synthetic or recombinant ω-conotoxin peptide according to any one of the preceding claims in a screen to identify compounds with activity at N-type VSCCs.